Supplementary material

to accompany

"**Spatiotemporally variable management by grazing and burning increases marsh diversity and benefits amphibians: a field experiment**"

by

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Fig. S1 An aerial photograph of the study site, Fekete-rét marsh, taken on August 8, 1965. Bare shorelines, extensive open water surfaces and mosaic vegetation structure maintained by extensive grazing can be observed. Source: Institute of Geodesy, Cartography and Remote Sensing, Budapest; www.fentrol.hu (accessed 9 December, 2014).

Fig. S2 Traditional grazing management to create and maintain mosaic marsh vegetation at Fekete-rét by Hungarian Grey Cattles. Photo: Szabolcs Lengyel

Fig. S3 Prescribed burning being started by fire crews (above) and ongoing (center), and an aerial view of burned areas (bottom) in the southern part of Fekete-rét marsh (Hortobágy National Park, E-Hungary) on September 9, 2007.

Fig. S4 A grazing exclosure (control plot) in the southwestern part of Fekete-rét marsh photographed in June 2007, i.e., one year after initiation of grazing (above) and three years later, in June 2009 (bottom). Accumulation of dead plant material along with vegetation homogenisation can be observed in the foreground and enhanced reed growth can be seen in the background of the control plot, and a retreat of reed at the marsh edge can be observed in the cattle-grazed areas outside the exclosure (bottom).

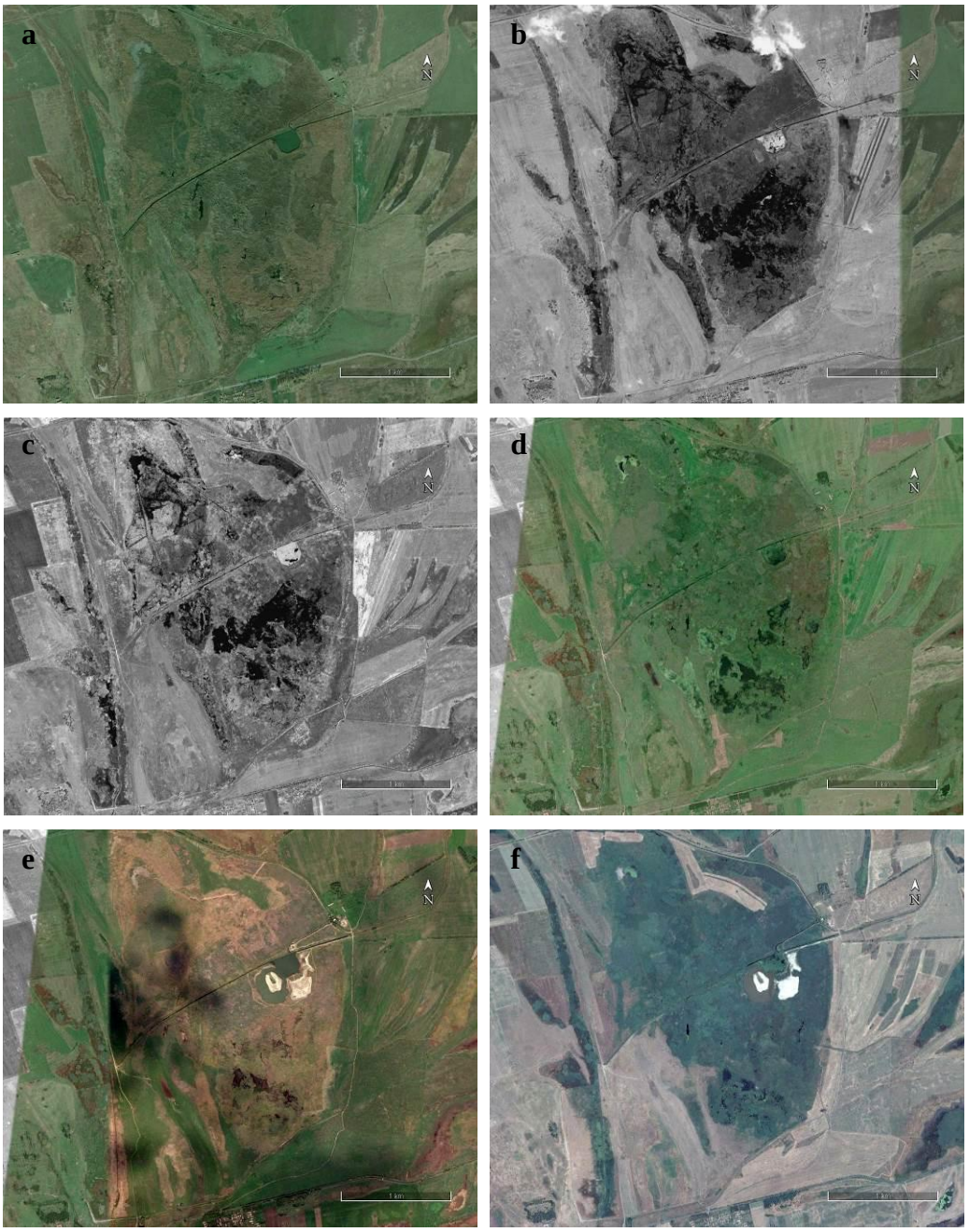

Fig. S5 Satellite images of Fekete-rét marsh (a) in November 2004, i.e., before the start of marsh management in 2004, (b) in May 2008 or after two years of grazing and the spring after the first late-summer fire in the previous year (2007), (c) in July 2008 or the summer after the first prescribed fire, (d) in August 2010 or the summer after the second late-summer fire (2009), (e) in September 2012 or three years after the second fire, and (f) in August 2013 or four years after the second fire. The effective removal of homogeneous reed can be observed on (b) in the spring after the first controlled burning carried out in early September 2007. In the second row, (c) shows the immediate recolonization of the marsh by reed by summer. Image (d) shows the mosaic-like vegetation of the marsh after the second fire (in 2009). Finally, images (e) and (f) show the almost complete regrowth of reed in the absence of management. Source: Google Earth (accessed 9 December 2014).